

CIMOR IMPLEMENTATION PLAN

Executive & Chapter Summaries

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EXECUTIVE SUMMARY

In September of 1999, The State of Missouri Department of Mental Health (DMH) issued a Request for Proposal to replace its current information systems. In September of 2000 it selected iServ Systems, Inc. (iServ) of Seattle, Washington to provide such a replacement.

As it inaugurated the effort to implement what is now known as the Customer Information Management, Outcomes and Reporting (CIMOR) project, the Department set a clear mission:

“To define, implement, and maintain an integrated Department-wide information system which produces accurate clinical, outcome, cost and all other relevant information to provide decision support and quality service for the State of Missouri Department of Mental Health customers and stakeholders.”

CIMOR embodies this mission by delivering the means to effectively collect, provide and manage information related to client needs and services, as well as provider activities, at the point of contact. This will actively support more efficient and effective delivery and coordination of client-centered services. It will also enable the Department and its providers to aggregate and process information needed to bill for services, manage allocations and proactively address the requirements of payers and regulators. Designed specifically as tool for decision support, CIMOR will enhance the ability to analyze cost of services delivered, and understand the impact of level of service on outcomes. In sum, it will allow DMH managers and stakeholders to clearly see how well the Department is meeting its commitment to garner and manage its resources, optimize its capacity to serve the people of Missouri and maximize the quality of the outcomes of the services it provides.

To accomplish this CIMOR subsystems, modules and special purpose databases will provide extensive automated support for managing enrollment, clinical, service, provider and outcomes-related information. Built upon a unified data and transaction set in compliance with HIPAA and other government standards, CIMOR is based on leading edge technology. This will enable ready but highly secure access to information by those who need and are authorized to use it. In short, as described in this Implementation Plan and as it will be deployed, CIMOR represents not only a replacement of legacy systems but also a considerable addition to the Department's capacity to manage information on behalf of all of its constituents.

The CIMOR system and its strategic implementation are designed to accrue increasing benefits over time to the Department, its consumers, providers and public stakeholders.

From the perspective of the Department, these benefits include:

- Full HIPAA compliance.
- Consistent client-centered, clinical and cost data for management decision support.
- Enhanced data capture and availability for improved CQI and outcomes reporting.
- Enhanced ability to meet external accreditation and regulatory requirements.
- Improved revenue capture / improved utilization of General Revenue (GR) funds via a streamlined DMH Central Financial Clearing House

From the consumer's perspective, these benefits include:

- System compliance with HIPAA, ADA and other requirements ensuring confidentiality / privacy.
- System-wide sharing of critical information related to treatment services and supports.
- Reduced administrative time and resources required for enrollment, screening, and similar processes.
- Better service coordination and improved outcomes.

From the provider perspective, the benefits include:

- Clinical decision support facilitated by on-line, real-time access to client information.
- Reduction in duplicative administrative data entry processes.
- Improved workflow efficiencies with resultant costs reductions.
- Streamlined billing and claims processing.

From the public stakeholder's perspective (e.g., legislature, Mental Health Commission), the benefits include:

- Accessible and consistent client-centered, clinical and financial data for decision support and planning.
- Standards-based outcomes data available for measuring value and quality of DMH performance.

The CIMOR Implementation Plan describes in detail the scope of the project, the project team, the project management process, the deliverables and payment schedule and the communications plan (Chapters 1 and 2). Chapter 3 includes the description of the Standards used to inform the entire project and how those standards have been incorporated into the CIMOR system. A summary of the operational environment in which CIMOR is to be deployed is presented in Chapter 4. The process of functional analysis that leads to the development of user requirements and then to technical specifications for

CIMOR modules is described in Chapter 5. Chapter 6 is a technical discussion of CIMOR subsystems and includes more detailed description of the logical model that drives configuration/development and deployment.

Confidentiality and security issues have wide impact on the accessibility of information across the Department. Confidentiality policy and technical strategy and tools for handling security issues are discussed in Chapter 7.

The CIMOR system will need to interface with numerous existing systems within the State, many external to the DMH. Chapter 8 identifies these systems and presents preliminary requirements for communications between them and CIMOR. Chapter 9 discusses hardware and infrastructure requirements for the entire CIMOR system.

The issues relating to converting data from the existing legacy systems to the CIMOR platform are listed in Chapter 10. A strategy for resolving these issues to effect an orderly transition to the new system is described.

System configuration and deployment into the DMH facilities and central operational environment are the subjects of Chapters 11 and 12. The resources required by the Department and its contractors, as well as the timeline covering the project duration are summarized.

Training and customer (user) support are described in Chapters 13 and 14.

Chapter 15 presents several optional components of the iServ Systems product line. The framework for incorporating these optional components exists in the deliverables described in the previous chapters.

The Implementation Plan is more than a roadmap to reaching the overall goals to be achieved in the CIMOR project. To the extent possible at this early phase, content and design details are presented as would typically be found in a requirements or technical specification document. In each Chapter of this document where issues remain outstanding, those issues are noted and strategies for resolution are described.

CHAPTER 1 – PROJECT DEFINITION SUMMARY

The CIMOR Project mission is “to define, implement, and maintain an integrated Department-wide information system which produces accurate clinical, outcome, cost and all other relevant information to *provide decision support* and quality service for the State of Missouri Department of Mental Health customers and stakeholders.” (*A Strategic Plan for Information Technology – July 1997*) To this end, the CIMOR system as described herein fulfills that mission as the replacement for current facility and Central Office information systems supporting both the business and decision support needs for all of DMH.

The CIMOR Project is informed by and congruent with the Department’s strategic planning initiatives as presented in “A Strategic Plan for Information Technology – July 1997”. The project contributes to the attainment of several strategic goals and objectives that were identified during the development of that plan, including the following:

- Enable the DMH to provide quality services and supports that will improve client outcomes and serve the interests of the public.
- Provide detailed clinical and service information on all clients.
- Respond to the intense information requirements of different management and payment structures, including managed care, from both the payer and the provider perspective.
- Provide the ability to determine actual cost of doing business.
- Maximize the potential for increased revenues.
- Eliminate or minimize the potential for the loss of revenues due to inefficient and/or duplicative billing processes.
- Facilitate the integration of cross-division and cross-facility information sharing.
- Provide an information continuum that promotes and preserves data integrity as well as accurate and timely reporting.
- Respond to increasing expectations for system accountability by multiple stakeholders.
- Maximize information access within the Department for all stakeholders.
- Maintain an information environment that provides comprehensive management data and decision support.

CHAPTER 2—COMMUNICATIONS PLAN SUMMARY

The CIMOR project will require significant and ongoing communication throughout its implementation.

The project's stakeholder groups are identified, including the:

- Mental Health Commission
- DMH Executive Team
- Consumer Groups
- Implementation Team
- Facility Implementation Team
- Provider Implementation Team
- Division Deputy Directors
- MRDD District Deputies
- ADA/CPS Regional Administrators
- Facility Directors and Superintendents
- Facility Assistant Directors of Administration
- OIS Staff
- Facility IT Directors
- State Advisory Councils
- Providers Groups

Target members of each group are listed and the project communications planned are outlined, including their methods and frequency. Both the existing and new project-specific channels of communication that will be utilized are described and discussed, including:

- Meetings
- Status Reports
- DMH Online
- Presentations
- Publications
- Document Sharing.

The ultimate success of any complex project depends on timely, accurate, and effective communication with all stakeholders impacted. Effective communication involves both the delivery of information and development of an ongoing dialogue with stakeholders. The purpose of the dialogue is to both deliver information and elicit feedback in order make implementation adjustments to assure a successful implementation.

The CIMOR project will require significant and ongoing communication throughout its implementation. Implementation team and stakeholder communications strategies are identified in the following sections to facilitate appropriate communications with all involved.

CHAPTER 3 – DEFINITION OF STANDARDS SUMMARY

The success of CIMOR as an information management and decision support tool depends upon the careful construction of its data and transaction sets. In light of this, DMH has elected to drive the configuration/development and deployment of the system through a common set of standards. To facilitate this the Department has adopted a proprietary decision support framework (the iServ Decision Support Framework) to serve as the foundation of all CIMOR modules and databases. This Framework is based upon a collection of nationally developed data, transaction, reporting, and outcome standards. By using the Framework, DMH ensures that CIMOR will support compliance with the requirements of the various regulators and accrediting agencies that monitor its performance. By selective incorporation of key Missouri and Department standards, the Framework will also enable CIMOR to operate effectively as a distributed information system linked by common data that facilitates decision-making, provides feedback, enhances communication, and thereby improves the quality of care delivery. Using the Decision Support Framework, the CIMOR system will automatically capture management and clinical performance data from routine daily workflows that will:

- Inform and support internal management decision-making and quality improvement
- Enable comparisons with national standards, and
- Support required reporting and site visits of accrediting agencies

The Decision Support Framework builds upon the Mental Health Statistics Improvement Program's Decision Support 2000+ information infrastructure to extend it to support the Mental Retardation and Developmental Disabilities and Alcohol and Drug Abuse domains, in addition to the Mental Health domain.

The Framework is based upon national standards that include:

- MHSIP's Decision Support 2000+
- Health Insurance Portability and Accountability Act of 1996
- The Joint Commission on Accreditation of Healthcare Organizations Accreditation Standards for Hospitals and Behavioral Healthcare Organizations
- The Joint Commission on Accreditation of Healthcare Organizations Outcomes Initiative

- National Committee for Quality Assurance's Report Card and Accreditation Standards for Managed Behavioral Healthcare Organizations
- National Committee for Quality Assurance's Healthcare Employers' Dataset and Information Standard
- Substance Abuse and Mental Health Services Administration's Treatment Episode Data Set (TEDS)
- National Association of State Directors of Developmental Disabilities Services' Core Indicators Project
- Federal Block Grant Standards

CHAPTER 4 – OPERATIONAL ENVIRONMENT SUMMARY

Understanding the current DMH operational environment is crucial to the success of the CIMOR Project. Describing that environment in terms that accurately represent the current and projected numbers and types of users, how they access the current system, their volume of use, and how that use is distributed among the various facility and provider types is imperative to provide the basis for making assumptions about CIMOR system requirements. Chapter 4 provides basic descriptive information about the Central Office, its staff and their deployment and then groups the 27 facilities located statewide by division and facility type. System access and use by the contracted providers affiliated with the divisions are described as well as the provider activities the current system supports. Specific transaction volume estimates for current (4614) and potential DMH system users (5446) are developed. DMH user transaction volumes are expected to rise 20% from the current 5,950,000 because CIMOR will support more functionality. Similar estimates are developed and discussed for contracted providers: The number of contract provider user transactions is projected to remain steady at 18,750,000. Increases in numbers of providers and transactions volumes are expected to be offset by CIMOR design efficiencies.

CHAPTER 5 – FUNCTIONAL ANALYSIS SUMMARY

Functional Analysis is at the heart of the iServ and Implementation Team approach to CIMOR. Rather than simply installing software in computers, this approach first requires that we clarify and characterize how the applications and databases will be used once CIMOR is fully implemented. Already underway in pre-implementation meetings, and continuing in a reiterative fashion during the design phase for each MOdel, functional analysis will enable the implementation team to systematically determine user

requirements. This in turn allows a more comprehensive understanding of data needs before proceeding to a description of technical specifications for design, configuration/development and deployment.

CHAPTER 6 – TECHNICAL DESIGN SUMMARY

This chapter describes the technical design for the CIMOR system, including several optional functional and operational platforms on which the system may be deployed. This technical design includes the central office administration and operational support sub-systems as well as the provider side operational sub-systems (also referred to as services management systems).

Central to the technical design specifications are the standards adopted and incorporated into CIMOR. As described in Chapter 3, these standards include data standards (multiple sources) and transaction standards (communication and messaging) that will link the provider side sub-systems to the central operational sub-systems.

The technical design for CIMOR also includes the specification of “shims” and interfaces that will be required, either on a temporary basis during “parallel” operations phases of the project, or permanently once legacy systems are turned off.

The overall design of CIMOR is presented schematically in Appendix 12. (The reader is advised to refer to that diagram for a summary view of the CIMOR architecture.)

The technical design of CIMOR has been carefully crafted to allow for maximum flexibility within an environment with disparate functional requirements. This design feature is critical in accomplishing the complex and critically staged deployment across the Department’s varied and diverse operational environment (see Chapter 12 for full description of deployment plan).

CIMOR is one system. However, for purposes of description and technical design, it is described in sections, each with various functional modules. Though the terms “module” or “modular design” are used to describe the system, these terms refer primarily to functional modules rather than to components that can or will be added or deleted at some point in the deployment.

Finally, this chapter addresses the technical considerations relating to the optional “delivery” methodologies that are under consideration for deployment in CIMOR. These delivery methodologies include:

- Client/server in a Local Area Network (LAN);

- Client/server plus Terminal Server and/or Citrix in an extended LAN or Wide Area Network (WAN) environment;
- Client/server with browser interface and IIS server;
- Client/server plus MicroSoft.net strategies for B-to-B document routing and messaging via BizTalk server;
- Thin client application only (Application Service Provider model); and
- Access to Central Financial Clearing House/Special Purpose Databases via independent browser.

CHAPTER 7 – ACCESS TO INFORMATION SUMMARY

A driving principle for CIMOR system development and deployment is that it must support sharing information across the DMH “Enterprise” as part of its decision support feature. To accomplish this, DMH must have clear, effective policies and strategies for protecting the confidentiality, preserving the security, and improving the accessibility of information. The CIMOR task is therefore to deliver across the Enterprise all information that its providers and staff members need to do their work, within the constraints of confidentiality and security imposed by internal policy and external regulatory guidelines. Chapter 7 discusses access and dissemination of information as it pertains to confidentiality and security policy, and strategy with regard to reporting.

Effective and appropriate information sharing is guided by and subject to applicable state and federal statutes and regulations. As described in Chapter 3, the Health Insurance Portability and Accountability Act of 1996 (HIPAA) creates new standards and specific requirements in the area of confidentiality and security. In response, DMH has formed a HIPAA Compliance Task Force that is charged with identifying, evaluating, and redefining the Department’s approach to techniques, policies, and procedures related to security and confidentiality. The CIMOR project will comply with HIPAA’s rules (and other Federal standards, e.g., Federal ADA confidentiality and reporting standards) pertaining to individual health information and electronic signature by implementing four levels of application security:

- Log-on security
- Workflow process security
- Tool security
- Client security

DMH extends its network security provisions to the Internet where it is used as part of the DMH

communications infrastructure with encryption levels meeting or exceeding the minimum HIPAA specifications.

One of the four goals of the DMH IT Strategic Plan is to “provide access to high quality data and decision support services.” Consistent with this goal, DMH intends to expand its Decision Support efforts throughout the Department by providing tools and advice on how to use departmental information resources. As part of this effort, the CIMOR system will provide both operational and analytic reporting capabilities to end-users.

CHAPTER 8 – INTERFACE REQUIREMENTS SUMMARY

Interfaces (permanent communication and translation data exchange routines) are required by CIMOR to communicate with other systems used by the State of Missouri, in general, and the Department of Mental Health, in particular. The purpose of these interfaces is to reduce duplication of data and allow greater accessibility to information for decision making with regard to the services provided to DMH consumers.

Though contractual responsibility for the creation of technical specifications and construction of these interfaces within CIMOR is TBD, the process of identifying and analyzing systems critical to central system operations is within the scope of the Implementation Plan. A preliminary list of systems identified that will require interfaces is presented and discussed.

The analysis and definition of interface import/export specifications will be completed by an interface workgroup composed of members of DMH IT staff and iServ Systems technical team. Responsibility for construction of required interfaces will be determined after the analysis and specification process is completed.

CHAPTER 9 – HARDWARE AND INFRASTRUCTURE SUMMARY

It is the intent of DMH to deliver CIMOR using standard web technologies and cost-effective Windows-based servers. The goal of cost-efficiency drives the choice of commodity servers and technologies. The value per unit cost of these components is excellent and the functionality and reliability is adequate for the DMH enterprise. The choice of a web-based delivery model is based on the lower total cost of ownership maintenance and the flexibility offered by this type of application.

DMH uses TCP/IP communications, Microsoft SQL Server, Visual Studio-based development tools, and Crystal Enterprise as the main reporting and OLAP tool. To the extent that these technologies are available and effective for CIMOR, they are the preferred toolset for the initial implementation. To the extent that these are unavailable, ineffective or inefficient, other alternatives will be considered.

CHAPTER 10 – DATA CONVERSION SUMMARY

The analysis and definition of mapping (conversion) requirements for porting DMH legacy system data into CIMOR, including scale and cost of the conversion process is to be accomplished during the 60 day period following acceptance of the Implementation Plan by the Department. The scope of the data conversion will depend to a large degree on the content of the deliverables in each of the MOdels described in Chapter 1.B.2. and Chapter 6.A & B. The data migration will be planned and implemented by a workgroup consisting of DMH OIS department representatives and members of the iServ Systems technical team. This workgroup will develop conversion requirements according to the guidelines and task assignments outlined in this chapter. They will drive towards a reasonable and practical conversion data set that will not include all data in current systems, but does enable access to a meaningful set of historical information on current and recently discharged clients.

CHAPTER 11 – SYSTEM CONFIGURATION PROCESS SUMMARY

System configuration begins after review and acceptance of the functional analysis described in Chapter 5 and the technical specification document outlined in Chapter 5.D. The system configuration process consists of two phases: Code development and configuration.

Having already accounted for standard data elements contained in the Decision Support Framework (see Chapter 3), during code development, iServ Systems will modify or construct database tables to incorporate additional data sets identified in the functional analysis. Business rule and user interface changes required by these database changes will then be made.

The actual process of system configuration follows these changes and involves setting-up the CIMOR modules and populating them with appropriate data, lists and specific content. This process will essentially follow the order of the implementation and deployment schedule presented in Chapter 12.

Internal testing will confirm the proper format, content and functionality of each configured module within each MModel before acceptance testing by the Implementation Team. Selective data conversion will then confirm the appropriate placement of data from legacy sources to target field in the CIMOR system.

CHAPTER 12 – DEPLOYMENT / INSTALLATION SUMMARY

The deployment and installation of the CIMOR Project must be carefully choreographed given its scope and scale. Chapter 12 describes the recommended order and approach to implementing CIMOR subsystems, beginning by stating the set of principles that will guide implementation of each MModel. Each CIMOR MModel consists of subsystems that are composed of modules or functional components. Each CIMOR subsystem will be deployed incrementally following formal acceptance of designs, schedules and testing results by the DMH Project Team. Each site at which CIMOR is installed will continue to run its current legacy system in parallel until testing and acceptance of each CIMOR module is complete. Only then will the site “cut over” to run the new CIMOR module exclusively. The various components of the DMH legacy system will remain operational until their respective functionalities are replaced by CIMOR at all sites.

After DMH acceptance of the CIMOR Logical Model and Physical Model in MModel.1, implementation of each subsequent CIMOR MModel will proceed through the following series of steps:

- The design sequence (incorporation of requirements into technical specifications)
- The build and test sequence
- Hardware and network deployment
- Pilot deployment in one site in one operational division
- Horizontal deployment to all facilities of the same type within the division
- Vertical deployment throughout next operational division
- Final deployment across all operational divisions within DMH

CHAPTER 13 – TRAINING SUMMARY

The CIMOR Training and Customer Support Center (TCSC) will be located in Jefferson City. The local TCSC will have a minimum of 10 desktops linked to a server and will be able to provide classes for groups of up to 10 DMH staff. In addition to on-site curriculum-based training, self-administered training modules will be available on CD and on-line. Beyond an initial project orientation/overview, specific training modules will be directed at system administrators, application managers, and end users.

CIMOR System Administrator and Application Manager Training are designed to provide the range of competencies to enable staff to function in those roles. End User Training is designed to prepare users for day-to-day operational use of CIMOR and will include, but not necessarily be limited to, specific content modules on:

- Intake and registration
- Clinical assessment and Plan of Care
- Data entry
- Billing and claims management
- Case management and communications
- Management and administrative reporting

The CIMOR TCSC is scheduled to open during the 3rd quarter of 2001 with on-line training available during the 4th quarter.

CHAPTER 14 – USER (CUSTOMER) SUPPORT SUMMARY

The CIMOR Training and Customer Support Center (TCSC) will provide technical support from 8:00 AM-5:00 PM Central Time, Monday through Friday, excluding Missouri State holidays. In addition, technical support will be provided on a 7 X 24 basis by on-call technicians available by cell phone or pager. During 2002, the second year of the technical support agreement, an electronic (web-based) system will be available 7 X 24. Requests for technical support may be initiated by telephone via an 800 number, FAX, e-mail, or via the Web.. Four levels of technical support will be provided depending on the complexity of the problem and urgency of the request.

CHAPTER 15 – OPTIONAL ADD-ONS SUMMARY

This chapter is included to describe optional components, applications, or services that relate to CIMOR but for the present remain outside the scope of the current engagement. These optional add-ons could be incorporated to enhance the functionality and/or value of the CIMOR system. In addition to the optional components/services listed below, it is entirely conceivable that other project related modules, complementary functions or professional services may be identified during the preliminary planning meetings or early design and implementation process that would offer exceptional gains in efficiency, economy, productivity or value if they were available. This chapter is a placeholder for such options, yet to be described. To the degree that optional options are now defined, they are presented herein for consideration. If selected by the Implementation Team, these will be incorporated into the CIMOR Project via the PAQ process as the contract (RFP) provides.

This chapter will describe several optional add-ons or optional components, applications, utilities or services that relate to CIMOR but for the present remain outside the scope of the current engagement. These could be incorporated to enhance the functionality and/or value of the CIMOR system. This is not intended to be a conclusive list but rather an evolving list of product enhancements or features that may be included in future releases as determined by the Implementation Team. These optional components generally fall within 3 categories:

- Functional software components, utilities or functional software routines (product enhancements) not specified in the Implementation Plan or referenced within the RFP.
- Professional services not considered to be within the scope of the contract (these may or may not have been referenced in the RFP).
- Application delivery methodologies.